



**PATENT**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No. : 09/415,815  
Confirmation No. : 5340  
Applicant : Klaus-Peter Linder  
Filed : Oct. 12, 1999  
Title : Apparatus for use in an industrial process and plant  
including such apparatus uses . . .  
TC/A.U. : 2123  
Examiner : E. G. Otero  
Docket No. : LIND3006/FJD  
Customer No. : 23364

**BRIEF ON APPEAL**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA. 22202-3514

Sir:

**INTRODUCTORY COMMENTS**

Pursuant to the provisions of 37 CFR 41.37, submitted herewith is Applicant/Appellant's Brief on Appeal along with the required fee. The period for response has been extended to expire on November 21, 2005 by the filing herewith of a Petition for a Three Month Extension of Time and payment of the required fee.

Any additional fees necessary for this appeal may be charged to the undersigned's Deposit Account No. 02-0200.

**REAL PARTY IN INTEREST**

(37 CFR 41.37(c)(1)(i))

The real party in interest is Applicant/Appellant's assignee Endress + Hauser GmbH + Co. The assignment was recorded on October 12, 1999 at Reel 010323 and Frame 0554.

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**RELATED APPEALS AND INTERFERENCES**

(37 CFR 41.37(c)(1)(ii))

There are no related appeals or interferences with respect to the invention defined in this application.

**STATUS OF CLAIMS**

(37 CFR 41.37(c)(1)(iii))

Claims 39, 41 and 43-50 are pending in this application.

Claims 39, 41 and 43-50 have been finally rejected.

Claims 1-38, 40 and 42 have been cancelled.

**STATUS OF AMENDMENTS**

(37 CFR 41.37(c)(1)(iv))

No amendment was filed after issuance of the Office Action of December 21, 2004.

**SUMMARY OF CLAIMED SUBJECT MATTER**

(37 CFR 41.37 (c)(1)(v))

(References are to page and line of the specification)

The invention disclosed and claimed relates to an apparatus for use in an industrial process and serves to communicate data and control signals from a central control unit via a bus (pg. 1, lines 5 - 7). The data is gathered by sensors, such as actuators, valves, pumps and the like, which are connected by the bus to the central control unit (pg. 1, lines 14 - 16).

Currently, a sensor specific specification is prepared for loading into the central control unit to provide the central control unit with a mimic image of the sensors. At the present time, the specification is not sufficient, that is a comprehensive mimic image is not possible (pg 1, lines 20 - 26). Testing can only be done at the present time on-line

for these sensors.(pg. 1, lines 28 - 31).

According to the invention, the apparatus (sensor, for example) is equipped so that it enables the central control unit to simulate operation of the sensor as if it really were on-line with the central control unit via the bus (pg. 2, lines 2 - 6). In the sensor, a software apparatus model with memory contains a comprehensive mimic image of the sensor including its parameters, functionality and sequence programs (pg. 2, lines 12 - 15).

Sensor models employed in the plant are loaded into the central control unit so that the operation of the plant including all parameters and functionalities contained in the sensor models by means of a software program sequenced in the control unit can be simulated (pg. 2, lines 24 - 29).

Referring to Fig. 1, the sensor (apparatus) model (20, 22, 24) is shown loaded in the sensor (Apparatus) (10, 12, 14), and also loaded in the central control unit 18 as indicated by 20<sup>1</sup>, 22<sup>1</sup> and 24<sup>1</sup>. Each apparatus model is a comprehensive mimic image of the real apparatus so that when making use of a corresponding software program, work can be done with the apparatus model just the same as with the real apparatus (pg. 3, lines 20 - 23).

The apparatus models are held in the corresponding apparatuses and the connection to the central control unit is made via the bidirectional bus, so that the central control unit then acts like a simulation processor as influenced by the corresponding software program in simulation. Then, should it turn out in simulation that the parameters contained in the apparatus model are unfavorable, they can be changed in the central control unit, and the corresponding changed apparatus model is then memorized in the apparatus. In this arrangement, the change to the apparatus model may relate not only to changes in the parameters but also to the software existing in each apparatus (pg 5, lines 22 - 31 to pg. 6, lines 1 - 3).

With the invention, it is now possible to conceive and test industrial systems in a simple manner without it being necessary to run the apparatuses on-line. This result is quite significant where the system includes a large number of apparatuses (pg. 6, lines 4 - 7).

**GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

**(37 CFR 41.37(c)(1)(vi))**

Claims 39, 41 and 43 - 50 are finally rejected under 35 USC 103(a) as unpatentable over Banks in view of Perry and MPEP§2144.04(VI)(C).

## **ARGUMENTS**

(37 CFR 41.37(c)(1)(vii))

### **The Examiner Confuses 35 USC 102 and 35 USC 103**

In enumerated paragraphs 27, 28 and 30 - 35, the examiner identifies one of the "limitations" recited in claim 49. These "limitations" are identified as "limitations [1] - [4]." The examiner notes the "limitation" and then concludes that it is found in Banks. If these "limitations" are found in Banks, then the rejection should be based upon 35 USC 102 and not 35 USC 103, i.e., if identity exists, then the proper statutory basis for the final rejection of claim 49 is 35 USC 102..

Assuming that the basis is 35 USC 102, how do the passages quoted by the examiner from Banks in enumerated paragraph 28, which are cited in isolation equate to "limitation[1]?" Applicant/Appellant is not the first to employ simulation modeling. It would be equivalent to arguing that since internal combustion engines are known, there can be no invention in internal combustion engines. Certainly, such a position would not be entertained. Viewing "limitations" in isolation is not the proper way to apply 35 USC 102 or 35 USC 103, for that matter.

The examiner suggests that we note "...that Banks at Page 398 states 'C++ is an object-oriented extension to the C programming language'." What is the significance of this notation relative to "limitation[1]?" None can be seen.

### **The Examiner's Reliance on the MPEP as a Reference is Misplaced**

In enumerated paragraph 29, the examiner states that "limitation [2]" of claim 49 "is disclosed by MPEP §2144.04(VI)(C) legal precedent." Certainly "legal precedent" can be employed, but not as a reference. The MPEP is an instruction manual, not a reference manual for teaching specifically defined structural features of a claim.

Reliance on the MPEP taints, it is respectfully submitted, the entire rejection. As in any combination rejection, if one element of the combination fails, the entire combination fails. That is the case here.

### **The Significance of Enumerated Paragraph 30 is Questioned**

In enumerated paragraph 30 the examiner states "...that this decentralized model storage is very similar to the 'plug and play' systems...." Perhaps, but why is this statement significant vis-a-vis claim 49 and Banks? It appears to be extraneous to the issue of the final rejection being considered.

### **MPEP §2144.04(VI)(C) Cannot be the Bases of Motivation**

In enumerated paragraph 41, the examiner states that ".....one of ordinary skill in the art would be motivated to use Perry and MPEP §2144.04(VI)(C) to modify Banks." Perhaps, one of ordinary skill in the art would be motivated to refer to Perry, but certainly not MPEP § 2144.04(VI)(C) because the MPEP is not a reference in the sense that it can independently teach a structural feature being claimed. As to the case recited in MPEP § 2144.04(VI)(C), namely, the case of *In re Kuhle*, 188 USPQ 7 (CCPA 1975), it should be noted that the elements of the claimed invention were shown in the combination of references in a different arrangement. The point was, however, that the main reference taught a moisture meter as did the claimed invention under consideration. Here we have generalized texts being applied against a specific claimed invention. Which one of the applied references teaches a process or plant which uses field devices and a control unit with software apparatus model being a mimic image of the filed device? Applicant/Appellant does see such a teaching in the references applied.

### **The Commentary regarding Centralized and Decentralized Software is Irrelevant**

In enumerated paragraph 43, the examiner discusses the "battle between centralized versus decentralized software" as being a battle that "...has been waging for decades..." No doubt that what the examiner is saying is true. Nevertheless, it has

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no bearing on whether or not claims 39, 41 and 43 - 50 are patentable over the art cited. Applicant/Appellant would suggest that such an analysis, while perhaps correct is not relevant under 35 USC 102 or 103.

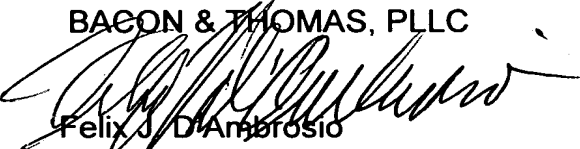
### CONCLUSION

In view of the above, it is respectfully submitted that claims 39, 41 and 43 - 50 should be allowed over the references of record and those applied.

Respectfully submitted

BACON & THOMAS, PLLC

Date: November 21, 2005



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APPENDIX OF CLAIMS  
(37 CFR 41.37 (c)(1)(viii))

Claim 39 The apparatus simulation arrangement as defined in claim 49, wherein:

the software of said software apparatus model is formulated in a uniform program language with which said functionality and said parameters of field device with which said software apparatus is associated can be explicitly simulated in the central control.

Claim 41 The simulation arrangement as defined in claim 49, further including:  
a data carrier, wherein:

said software is memorizable on said data carrier and usable by a software program in the central control unit.

Claim 43 The plant as defined in claim 50, wherein:

said software are modifiable by said central control unit depending on the result of simulation.

Claim 44 A method of simulating the operation of a plant including a central control unit, a buss and at least one apparatus having memorized software which is a specification of the apparatus containing a mimic image of the apparatus, the mimic image including parameters, functionalities and programs of the apparatus, comprising the steps of:



loading the software of the apparatuses to be employed in the plant into the central control unit; and

simulating the operation of the plant by including all parameters and functionalities contained in the software by means of a software program sequence in the control unit.

Claim 45 The method as defined in claim 44, further comprising the step of: modifying any apparatus by the central control unit as a function of the result of said simulation.

Claim 46 A control unit used in an industrial process connected via a bus to at least one apparatus of the industrial process, comprising:

means memorizing a software, said software being a specification of said at least one apparatus containing a mimic image of said at least one apparatus including parameters, functionalities and programs of said at least one apparatus, said software providing said control unit with said specification of said at least one apparatus.

Claim 47 The control unit as defined in claim 46, wherein said software is loaded from said apparatus into said control unit via said bus.

Claim 48 The control unit as defined in claim 47, wherein said control unit is connected via said bus with a plurality of apparatuses used in said industrial procedd.

Claim 49 In an industrial process including a central control unit, a bus and a plurality of field devices connected to the central control unit via the bus, a simulation arrangement including:

a software apparatus model associated with at least one of the field devices, said software apparatus model being a mimic image of the field device with which said software apparatus model is associated, including parameters, functionalities and programs of the field device with which said software apparatus model is associated, wherein:

said software apparatus model is stored in the field device with which said software apparatus model is associated,

said software apparatus model is loadable via the bus in the central control unit, and

the central control unit being provided with the parameters, functionalities and programs of the field device with which said software apparatus model is associated, so that the field device with which said software apparatus model is associated can be simulated in the central control unit.

Claim 50 A plant including:

a central control unit, a bus and a plurality of apparatuses connected to the central control unit via the bus; and

a simulation arrangement having an apparatus model associated with each apparatus, said apparatus model having memorized software which is a specification of the apparatus containing a mimic image including parameters, functionalities and

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programs of the apparatus, wherein:

- the software of each apparatus being loadable into said central control unit so that the operation of the plant can be simulated by testing all parameters and functionalities in said software.

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Evidence Appendix  
(37 CFR 41.37(ix))

No evidence pursuant to 37 CFR §§ 1.130, 1.131 and 1.132 is being relied upon in this appeal.

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Related Proceedings Appendix

37 CFR 41.37(x))

There are no decisions of a court or the Board in any proceeding identified pursuant to paragraph (c)(1)(ii).